

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

In the Matter of

Modernizing the E-rate
Program for Schools and Libraries

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WC Docket No. 13-184

COMMENTS OF SUNESYS, LLC

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Date: April 7, 2014

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COMMENTS OF SUNESYS, LLC

Sunesys, LLC (“Sunesys”) submits these comments in response to the Federal Communications Commission’s (“Commission”) Wireline Competition Bureau’s (“Bureau”) Public Notice requesting focused comments on modernizing the E-rate program in the above-captioned proceeding.¹

INTRODUCTION

Sunesys is a dynamic, forward-thinking telecommunications-services and fiber-solutions provider that has been delivering efficient, cost-effective broadband solutions to a variety of institutions in many states around the country since 1998. Over that sixteen year period, Sunesys has laid thousands of miles of fiber, connecting tens of thousands of users to each other and to the world. As a certified E-rate service provider, much of this work has been done on behalf of schools and libraries, where Sunesys has been laying the foundation for the future of high-capacity broadband and helping to bring the forefront of digital connectivity to our nation’s students and educators.

At the heart of Sunesys’ E-rate supported broadband services are its managed wide area network (“WAN”) solutions. Sunesys has substantial experience in designing, deploying and managing WANs for countless school districts, including some of the nation’s largest and, therefore, most data-intensive, such as the Philadelphia School District and the Cobb County, Georgia School District. Further, Sunesys’ managed WAN solution provides a technologically advanced and scalable network that can grow to accommodate any school’s or library’s future bandwidth needs, year after year without a corresponding growth in the cost to Sunesys’ customers. Sunesys designs its WAN systems in a manner that allows its customers to upgrade

¹ Public Notice, Wireline Competition Bureau Seeks Focused Comment on E-rate Modernization, WC Docket No. 13-184, DA 14-308 (rel. Mar. 6, 2014) (“*Public Notice*”).

to additional connectivity by simply switching out the modulating electronics that light the fiber. Sunesys has been able to price 1 Gbps capacity fiber connections at much lower prices compared to what many schools or libraries are able to receive for more traditional broadband options, including copper and cable, and with very little change in price when increasing capacity from 100 Mbps to 1 Gbps capacity.

In addition, because of Sunesys' network design, schools or libraries can also go from 1 Gbps to 10 Gbps of capacity with relative ease and minimal costs. In fact, this exponential increase in capacity currently averages out to less than 3 times the cost compared to 1 Gbps of capacity for Sunesys customers – and the cost of these increases in capacity continue to decrease. Because Sunesys is able to provide cutting-edge broadband capacity at a price and in a manner that makes gigabit connectivity affordable today, some of the schools that Sunesys serves have already selected WANs with up to 10 Gbps to satisfy their data needs for years to come.

But with broadband technology and Wi-Fi devices poised to transform education inside classrooms and libraries – an evolution that also requires more robust and scalable data networks – the Commission was correct in its belief that “the E-rate program must evolve to meet the current and future needs of schools and libraries.”² Indeed, as more and more schools and libraries incorporate digital learning programs, broadband is no longer a luxury – it is necessity for students and library users. As the Bureau recognized, however, “some schools and libraries do not have access to high-capacity broadband connections,” and these entities “cannot afford to pay their share of the cost of deploying last-mile capacity broadband.”³

² *In the Matter of Modernizing the E-rate Program for Schools and Libraries*, Notice of Proposed Rulemaking ¶ 9, WC Docket No. 13-184 (rel. Jul. 23, 2013) (“NPRM”).

³ *Public Notice*, ¶¶ 24-25.

Thus, in order to achieve the Obama Administration’s target that 99% of America’s schools will have data speeds of no less than 100 Mbps and a target speed of 1 Gbps, while also achieving President Obama’s goal of leveling the playing field for rural students and library users more generally,⁴ Sunesys urges the Commission to provide substantial funding for demonstration projects that meet the following criteria: (1) the project would provide scalable infrastructure to unserved or underserved rural schools or libraries; and (2) the project would be able to leverage existing middle-mile facilities in reasonable proximity to the schools and libraries to be connected. In addition, if these conditions are met in more demonstration projects than the Commission can support with the funding available, and everything else is relatively equal among proposed projects in rural areas, Sunesys urges the Commission to also evaluate such demonstration projects in terms of how they complement and reinforce other state and federally-funded infrastructure and universal service fund programs, including the rural healthcare program.

As Commissioner Pai has noted, the current system “consistently underfunds small, rural schools and libraries.”⁵ The Commission’s efforts to reform the E-rate program and to permit service providers to demonstrate the cost-effectiveness of new models of providing high-capacity broadband connectivity to the nation’s rural schools and libraries are therefore timely and essential to closing the digital divide – which is why Sunesys supports these efforts. If the Commission were to permit E-rate demonstration projects in a manner consistent with the

⁴ The White House, ConnectED: President Obama’s Plan for Connecting All Schools to the Digital Age (2013), *available at* http://www.whitehouse.gov/sites/default/files/docs/connected_fact_sheet.pdf.

⁵ Statement of Commissioner Ajit Pai on the Public Notice of the Wireline Competition Bureau Addressing E-rate Modernization at 1 (rel. Mar. 7, 2014), *available at* <http://www.fcc.gov/document/commissioner-pai-statement-wcbs-pn-addressing-e-rate-modernization>.

comments below, Sunesys and other competitive providers of broadband services would be able to serve even more jurisdictions and provide scalable, high-capacity connectivity to unserved or underserved school and libraries, while the Commission would also gain critical information about the characteristics of the projects that enable future E-rate funds to be more efficiently and effectively utilized.

DISCUSSION

I. The Commission Should Provide Substantial Funding For Demonstration Projects That Will Cost Effectively Connect Unserved Or Underserved Rural Schools And Libraries, As Well As Provide Valuable Information To The Commission That Will Help Ensure Future E-rate Funds Are More Efficiently Used

The proposed \$2 billion surge in funding over the next two years offers a unique opportunity to ensure that the E-rate program can be harnessed to help bridge the digital divide between rural and urban students and library users, while also providing important information to the Commission that will help ensure the cost-effective use of future E-rate funds. As the Bureau itself and Commissioner Pai have recognized, the existing E-rate regulations and funding priorities disproportionately short change small, rural schools and libraries and discourage funding for the large deployment costs necessary to provide them scalable infrastructure. **But the bottom line is this: while everyone, whether it be the media, the service providers, the Commission, the schools and libraries themselves, or the general public, can endlessly talk about bridging the digital divide, it is never going to happen until rural schools and libraries are provided last-mile, scalable infrastructure.**

The Commission has a golden opportunity here to make important progress in bridging the digital divide, while also obtaining valuable information that can assist it in ensuring the further erosion of the digital divide without depleting the E-rate fund. The demonstration projects discussed herein will thus provide multiple benefits by not only connecting individual

rural schools and libraries that were previously unserved or underserved, but at the same time will provide the Commission with proof-of-concept reference points and invaluable lessons about how to reduce ongoing costs to the fund.

Given that the E-rate program was established 18 years ago – but there still remain schools and libraries that lack any true broadband connection – Sunesys agrees that demonstration projects should not be funded simply to “tinker around the edges.”⁶ As discussed immediately below, the Commission has ample discretion to fund last-mile, experimental infrastructure projects so long as the projects enhance access to advanced communications services for schools and libraries. These projects are also critically important for the additional reason that they will provide the Commission with valuable information it needs to evaluate the most effective use of E-rate funds.

A. The Commission has the flexibility to fund the types of demonstration projects proposed herein

Congress granted the Commission considerable discretion in how it chooses to fund schools’ and libraries’ access to enhanced communications services. Given that discretion, the Commission should not feel hamstrung by its current, self-imposed, funding rules when considering the merits of a particular demonstration project. Stated differently, demonstration projects should not be limited to a surge of the status quo. Instead, the Commission should fund projects that break new ground and provide benefits on multiple levels so that the Commission can evaluate innovative projects compared to the status quo to properly inform its reform efforts.

Section 254(h) of the Act, 47 U.S.C. § 254(h), establishes the E-rate program and does not require that all funds used to support schools and libraries be limited to the premises of an E-

⁶ Statement of Commissioner Ajit Pai at 3, *available at* <http://www.fcc.gov/article/doc-322284a4>.

rate recipient. On the contrary, Section 254(h)(1)(B) emphasizes that the critical factor governing E-rate eligibility is whether the service or project in question is used “for an education purpose”:

All telecommunications carriers serving a geographic area shall, upon a bona fide request for any of its service that are within the definition of universal service under subsection (c)(3) of this section, provide such services to elementary schools, secondary schools, and libraries **for educational purposes** at rates less than the amounts charged for similar services to other parties.⁷

Section 253(c)(3), in turn, provides that in designating services eligible for E-rate support, “the Commission may designate additional services for such support mechanisms for schools, libraries, and health care providers for the purposes of subsection (h) of this section.”⁸ Finally, subsection (h) directs the Commission “to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services” for schools and libraries. A proper reading of the statute therefore permits the Commission to consider funding any demonstration project so long as it will ultimately enhance access to such services in the classroom. Because last-mile scalable infrastructure projects – even if they must be completed off the school’s premises – are necessary for students and library users to receive access to advanced telecommunications and information services in their classroom or facilities, the Commission has ample authority to fund such demonstration projects.⁹

Further, the Bureau recognized that installation and special construction charges for larger projects must be prorated over three years or more, which has the effect of

⁷ 47 U.S.C. § 254(h)(1)(B) (emphasis added).

⁸ 47 U.S.C. § 254(c)(3).

⁹ To be clear, Sunesys is not advocating that additional funding be dispersed for other projects that will occur off of schools’ and libraries’ premises, but instead limits its discussion to the deployment of scalable infrastructure needed to connect unserved or underserved rural schools and libraries.

disproportionately harming “rural and other applicants that face the largest deployment costs, especially because there are no exceptions for rural deployments or other unique circumstances.”¹⁰ Sunesys therefore urges the Commission to relax the generally applicable \$500,000 threshold and multi-year proration requirements for demonstration projects that propose to deploy scalable infrastructure to unserved or underserved rural areas and instead consider each project on its own merits.

B. The Commission should maximize the effectiveness of demonstration projects by targeting substantial funds to unserved or underserved areas that could cost effectively be connected to existing middle-mile facilities and complement other Commission programs

As the Commission evaluates more fundamental reforms to the E-rate program, it should support proof of concept experiments that would provide needed scalable infrastructure to unserved or underserved E-rate eligible participants to inform the Commission’s decision about how best to allocate scarce resources in the future relative to the status quo. Sunesys respectfully submits that the Commission should provide funding for demonstration projects that meet the following criteria: (1) the project would provide last-mile, scalable infrastructure to unserved or underserved rural schools or libraries; and (2) the project would be able to leverage existing middle-mile facilities in reasonable proximity to the schools and libraries to be connected. Such proposed projects should be able to demonstrate to the Commission and others that the recurring costs associated with providing high-capacity broadband over new connections are affordable for the applicants on a going-forward basis. To the extent that any such proposed demonstration projects satisfy these criteria and otherwise exhibit the same potential to lower long-run costs, Sunesys recommends that the Commission give weight to any project that would complement and reinforce other state and federally-funded infrastructure and universal service fund programs,

¹⁰ *Public Notice* ¶ 33.

including the rural healthcare program. The question is which “S” word is going to drive future decisions in this area – synergies or silos. Sunesys strongly recommends it be the former.

As an initial matter, scalable infrastructure is the most cost-effective way to deliver advanced, high-capacity broadband because it is the most adaptable method of delivery. Sunesys’ experience is that its school and library customers face the smallest incremental costs when they decide to scale up available capacity from the immense potential capacity that its network provides. This consideration is exceedingly important with respect to currently unserved or underserved rural areas, as it is important to get it right the first time and provide rural schools and libraries with the ability to increase their capacity at the least possible incremental cost.

Further, given the persistent digital divide and the historic underfunding of small, rural schools through the E-rate program, Sunesys respectfully submits that substantial funds should be devoted to providing scalable infrastructure to unserved or underserved rural school and libraries. First, if rural schools and libraries are not adequately connected, many students will have nowhere to go to get the broadband access they need to do their homework assignments. Nor is it likely that the surrounding community will experience the benefits of broadband unless and until the community’s schools and libraries are connected.

Second, with the recent middle-mile infrastructure projects funded in part through the State Broadband Initiative (“SBI”) grant program and the Broadband Technology Opportunities Program (“BTOP”), the capital investment costs necessary to provide the “off-ramps” to currently unserved or underserved schools and libraries are now economically feasible in many areas for the first time. The Commission should therefore give greater weight to funding experimental projects that demonstrate the greatest ability to leverage existing middle-mile

facilities to connect unserved or underserved areas that are now within reach and that ensure that ongoing costs will be affordable.

Finally, if everything else is relatively equal between two such demonstration projects, the Commission should not perform a review of their merits in isolation. The Commission should instead seek to ensure that any “tie” goes to the demonstration project that helps meet the overall policy agenda of universal service and the National Broadband Plan. Thus, funding in this situation should be designed to complement and reinforce other Commission programs, as well as other federal and state programs aimed at addressing broadband access, including the Rural Healthcare Connect Fund. Indeed, in the National Broadband Plan, the Commission found that the “[t]he largest element of deployment costs is not the fiber itself, but the placement costs associated with burying the fiber in the ground (or attaching it to poles in an aerial build).”¹¹ The Commission further found that these placement costs can account for approximately three-quarters of the total cost of fiber deployment – and that “[s]ubstantial savings can be captured if fiber builds are coordinated with other infrastructure projects in which the right-of-way ... is already being dug.”¹² When viewed outside of a vertical silo that only considers the costs and benefits to schools and libraries, any demonstration project that has the potential of significant spillover cost savings and the ability to coordinate broadband deployment with other community stakeholders should thus be considered favorably when deciding between other closely comparable projects that do not have such benefits. Sunesys, however, wants to make clear that it is not urging the Commission to use E-rate funds through the proposed demonstration projects discussed in these comments to support any entities other than rural schools and libraries that are currently unserved or underserved.

¹¹ See *Nat’l Broadband Plan* at 114.

¹² *Id.*

C. Overview of potential Sunesys demonstration projects

As detailed above, Sunesys supports the concept of demonstration projects that would provide scalable infrastructure in the most cost-effective manner to currently unserved or underserved schools and libraries. In turn, the scalable assets constructed could be leveraged to support other Commission objectives, such as providing high-capacity broadband access to rural healthcare facilities and providing greater access to advanced communications services to rural residents more generally. Any such demonstration project proposed by Sunesys would detail the capacity, costs, benefits, upgrade potential, growth potential, and the efficient use of installation funds, as well as Sunesys' ability to leverage the assets of previously funded middle-mile projects.

For example, Pennsylvania previously obtained funds for a middle-mile stimulus project that serves institutions of higher education. Sunesys would propose to leverage its participation in that project to better serve the rural K-12 and library market and deliver high-capacity broadband services to an additional 100 schools and libraries by delivering last-mile connectivity through a demonstration project funded, in part, by the Commission. A demonstration project of this type would permit the rural applicants to have access to urban quality competitive service offerings, such as Gigabit Ethernet data circuits and Dedicated Internet Access, and reach over 70% of the rural counties in Pennsylvania. And Sunesys would be able to provide service with on-going recurring charges that are comparable to urban rates for the same services provided.

Further, although they would not be directly funded through any such demonstration project, hospital systems in Pennsylvania have limited information-sharing capabilities and are limited to regional or county-level data-sharing initiatives. By deploying ultra-high speed data connectivity to rural schools and libraries in Pennsylvania, the Commission will also ensure that

hospitals located throughout Pennsylvania will be able to more cost-effectively develop the “Network of Networks” concept of connecting all Pennsylvania-based Health Information Exchanges (“HIEs”) to bring together patient data and information that will allow for the continuation of meaningful use, as defined by the Department of Health and Human Services.¹³ Such additional connectivity will be much more cost effective once previously unserved or underserved schools and libraries located in rural areas can serve as anchor institutions in their communities. This proposed experiment will thus enhance the ability of rural health care providers to adopt and fully utilize numerous telemedicine applications and further facilitate the exchange of electronic health records to improve coordinated care and thereby realize savings in health care costs, all of which are objectives shared by the Commission.¹⁴

In California, as an additional example, another middle-mile project’s assets could be leveraged to provide the same enhanced services to a portion of the Central Coast between Salinas and Soledad, comprised of approximately 430 square miles throughout two portions of Santa Cruz and Monterey Counties. The proposed network will pass through 1,234 unserved and 447 underserved census blocks and will allow Sunesys to serve numerous school districts and libraries along the 100-mile route through some of the more rural communities in California, while also permitting rural healthcare facilities in this area to similarly access high-capacity broadband services at reduced costs.

¹³ See, e.g., HHS Press Release, *More Partnerships between doctors and hospitals strengthen coordinated care for Medicare beneficiaries*, available at <http://www.hhs.gov/news/press/2013pres/12/20131223a.html> (last visited Mar. 5, 2014) (noting that increased information sharing and coordinated care is an integral component of the Affordable Care Act’s provisions aimed at reducing the rate of Medicare spending).

¹⁴ See *in the Matter of Rural Health Care Support Mechanism*, Report and Order, WC Docket No. 02-60, 27 FCC Rcd. 16678, ¶¶ 21-23 (rel. Dec. 21, 2012).

Each of these demonstration projects would also allow these services to be made available to the rural applicants at competitive urban rates. This effort would dramatically assist in bridging the digital divide between urban and rural applicants and communities in those areas. In some areas, a typical rural customer who receives a tariffed T-1 circuit would pay approximately \$450 dollars per month for such a circuit. Sunesys, on the other hand, would provide service with 1 Gbps capacity, which entails 666 times greater speed and capacity than a T-1, but for less than twice the cost of a T-1 and at rates equal to those charged to urban customers for the same service.

Each of the demonstration projects detailed above offers an innovative solution that would maximize cost-efficient use of E-rate funds by dramatically lowering recurring costs over time, while also complementing other Commission universal service goals. Sunesys would welcome the opportunity to submit such proposals to the Commission for its consideration and provide further information to the Commission upon request.

II. The Commission Should Explore Reforms That Reduce Compliance Costs So That Eligible Participants Have More Funds To Deploy Broadband Technologies Within Schools And Libraries

The Commission also seeks comment on how best to focus funds so that schools and libraries have the available resources to deploy high-speed connectivity to and within their facilities.¹⁵ Sunesys recognizes the need and importance of the ability of schools and libraries to deploy high-capacity broadband throughout their buildings. This is a vital component of bridging the digital divide and allowing students and library patrons to fully take advantage of the broadband connectivity supported by Priority 1 funding. Sunesys supports the Commission's efforts to ensure this support continues to exist.

¹⁵ *Public Notice*, ¶¶ 6-10.

Disbursing funds between Priority 1 and Priority 2 projects does not necessarily have to be a zero-sum game, however, if other cost-saving reforms under consideration by the Commission are adopted, thus decreasing the overall demand on the fund and leaving more resources for all projects. Sunesys therefore encourages the Commission to explore means to reduce the overall costs of the fund, particularly with respect to forming consortia and eliminating unnecessary administrative costs.

For example, with few exceptions, aggregating demand through groups of individual institutions whose interests are aligned can have beneficial results, particularly with respect to reducing administrative costs. For instance, consortia and other group purchasing opportunities can take advantage of economies of scale through aggregated purchasing of broadband services, and promote the efficient use of facilities. To that end, the Commission should reform the E-rate program in a manner that will further encourage schools and libraries to participate in consortia and other group purchasing opportunities. The Commission can do this by simplifying and prioritizing the consortia or group purchasing E-rate application review process.

Multi-year contracts would also provide cost savings by creating administrative efficiencies and lowering fees, as such contracts allow schools and libraries to spread the costs of large capital expenditure projects over a longer period of time, encouraging investment in much-needed broadband solutions. Moreover, given the consistent push backs of the Form 471 filings windows, even permitting 18 months for construction projects to be completed would be a welcome modification for larger installation and special construction projects.

Finally, the Commission could also contribute to reducing costs for schools and libraries, by simplifying the administrative and reporting process. The goal must be to reduce the overall administrative burden on schools and libraries by eliminating the information collection

requirements that are not useful for the Commission's analysis, and the Commission should not add another layer of unhelpful data requests on top of the existing requirements.

CONCLUSION

For all of the foregoing reasons, Sunesys respectfully requests that the Commission fund demonstration projects in this proceeding, and adopt the further reforms of the E-rate program, consistent with the recommendations set forth herein.

Respectfully submitted,

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